WASHINGTON STATE UNIVERSITY
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ELECTRON MICROSCOPE CENTER (509) 335-3025

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DEVELOPING PROCEDURES FOR THE PREPARATION OF CHICKEN BLASTODERMS FOR TRANSMISSION ELECTRON MICROSCOPY

Non-incubated chicken blastoderms prepared for Transmission Electron Microscopy with standard fixatives of glutaraldehyde and osmium tetroxide, gave a different appearance from incubated (5-36 hr.) chicken blastoderms: cell and organelle membranes of unincubated blastoderms lacked sharply defined boundries and were diffuse in appearance.

A series of emprirical experiments was begun to determine procedures and fixatives that would adequately preserve general cell morphology and fine structure of the unincubated eggs and that could also be used to preserve the incubated eggs.

Freshly laid chicken eggs were removed from their shells and the albumin separated from the vitelline membrane. Standard BEEM capsules were cut into rings approximately 4mm deep. A ring was placed against the vitelline membrane over the top of the blastoderm. The well thus formed was filled with 0.5% glutaraldehyde in 0.1M phosphate buffer (pH-7.4) at room temperature. After 5-30 minutes, the glutaraldehyde was pipetted out and replaced with 67% osmium tetroxide in CCl_4 (W/V - 1 gm OsO_4 in 1.5 ml CCl_4) and the top of the ring immediately covered. The osmium tetroxide solution was pipetted out after 1-4 minutes and 30% ethanol substituted. The vitelline membrane was cut around the ring and the ring and blastoderm were then lifted from the egg. Excess yoke was drained from the blastoderm, then standard dehydration and Epon impregnation steps were continued in small vials

Short fixation times in 0.5% glutaraldehyde, followed by high concentrations of osmium tetroxide have been sucessfully used to preserve the fine structure of cell and organelle membranes in both the non-incubated and incubated chicken blastoderms.

P R O G R A M

Northwest Section
SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

Basic Science Building
University of Oregon Health Sciences Center, Portland
Saturday, October 30, 1976

8:30 A.M. Registration in 4th floor lobby.

Session A - Room 4320

9:00 Studies of absorption of alfalfa-bound radionuclides from the gastrointestinal tracts of guinea pigs and rats. T. Graham, A. Crosby and M. Sullivan, Biology Department, Battelle Pacific Northwest Laboratories.

9:15 Effect of high levels of dietary vitamin E on liver and plasma lipids and fat soluble vitamins in rats. N. Y. J. Yang and I. D. Desai, Division of Human Nutrition, School of Home Economics, University of British Columbia.

9:30 Effect of dietary fiber upon plasma lipids, sterol balance and bowel function. T. L. Raymond, W. E. Connor, D. S. Lin, and S. L. Connor, Department of Medicine, University of Oregon Health Sciences Center.

9:45 The role of foam cells and plasma lipid in the genesis of atherosclerosis. J. C. Hampton, Biology Department, Battelle Pacific Northwest Laboratories. (Introduced by F. P. Hungate)

10:00 Collagen synthesis by cultured human aortic smooth muscle cells. D. L. Layman, E. H. Epstein, Jr., R. F. Dodson, Department of Medicine, University of Oregon Health Sciences Center. (Introduced by A. Rampone)

10:15 Arterial blood gases in dogs exposed to cigarette smoke. S. M. Loscutoff, G. L. Collins and G. M. Zwicker, Battelle Pacific Northwest Laboratories. (Introduced by F. P. Hungate)

10:30 Noninvasive physiological measurements performed on Fisher rats exposed to three different types of cigarette smoke. D. I. Hilton, J. R. Decker and R. D. Phillips, Biology Department, Battelle Pacific Northwest Laboratories.

Session B - Room 4340

9:00 Control of pulmonary vascular resistance in turtles. W. K. Milson, Department of Zoology, University of British Columbia. (Introduced by A. W. Martin)

9:15 Cardiovascular dynamics of amphibia. B. L. Langille, Department of Zoology, University of British Columbia.

9:30 The biochemistry of sound processing in echolocating porpoises and whales. D. C. Malins, National Marine Fisheries Service.

9:45 Initiation of diving bradycardia in the muskrat. P. C. Drummond and D. R. Jones, Department of Zoology, University of British Columbia. (Introduced by A. W. Martin)

10:00 The use of electrophoretic data in studying populations of marine organisms. F. M. Utter, National Marine Fisheries Service. (Introduced by D. Malins)

10:15 Predator-prey interactions under the influence of ammonia. D. M. Woltering, J. L. Hedtke and L. J. Weber, Department of Fisheries and Wildlife, Oregon State University.

10:30 The effects of laser irradiation on fish chromatophores. J. W. Hawkes, National Marine Fisheries Service.

10:45 Coffee break in 4th floor lobby.

11:00 Guest lecture, Room 4320. "Life and death of Nautilus, with some particular inquiries into reproduction, circulation and excretion", by Dr. Arthur W. Martin, Department of Zoology, University of Washington.

12:00 Noon Lunch in University Hospital South, 3rd floor Cafeteria.

Session C - Room 4320

1:30 Dose-rate studies of effects of inhaled uranium mine air contaminants in rodents. J. C. Gaven, R. F. Palmer and B. O. Stuart. Biology Department, Battelle Pacific Northwest Laboratories.

1:45 Effect of microwave irradiation on sensitivity of mice to sound-induced seizures. R. L. Sheldon, D. L. Hjeresen and R. D. Phillips, Biology Department, Battelle Pacific Northwest Laboratories.

2:00 Embryotoxicity of ultrasound exposure at nine days of gestation in the rat. M. R. Sikov and B. P. Hildebrand, Departments of Biology and Physics and Instrumentation, Battelle Pacific Northwest Laboratories.

2:15 Cross-placental transfer and embryotoxicity of lead in rats. P. L. Hackett and M. R. Sikov, Biology Department, Battelle Pacific Northwest Labroatories.

2:30 The plasma membrane Ca^{2+} pump: an estimate of stoichiometry. F. L. Larsen and F. F. Vincenzi, Department of Pharmacology, University of Washington.

Session D - Room 4340

1:30 An investigation of the blood brain barrier in the rainbow trout. L. Klika and L. J. Weber, Department of Fisheries and Wildlife, Oregon State University.

1:45 The blood clotting response to stress in salmonids. L. S. Smith, College of Fisheries, University of Washington.

2:00 Oxygen transport in trout during exercise. J. W. Kiceniuk and D. R. Jones, Department of Zoology, University of British Columbia.

2:15 The effect of increased metabolic rate on renal function in rainbow trout (Salmo gairdneri). E. L. Hofmann and D. G. Butler, Department of Zoology, University of Toronto. (Introduced by L. J. Weber)

2:30 Use of fish in the study of bubble formation in decompression studies. D. Beyer, College of Fisheries, University of Washington.

2:45 Coffee break in 4th floor lobby.

3:15 Decrease in L-dopa decarboxylase activity in rat liver and kidney after chronic administration of L-dopa; partial protective effect of pyridoxine. K. Weiser, University of Oregon Health Sciences Center. (Introduced by R. L. Bacon)

3:30 Early changes in the dynamics of crypt cell populations in mouse colon following administration of 1,2-dimethylhydrazine. T. C. Richards, Department of Anatomy, University of Oregon Health Sciences Center. (Introduced by R. L. Bacon)

3:45 Discrimination between and habituation to olfactory cues by Lemur catta in the lab and in the field. A. Mertl, Department of Pharmacology, University of Oregon Health Sciences Center. (Introduced by R. L. Bacon)

4:00 An S.E.M. study of the avian lung. N. H. West, Department of Zoology, University of British Columbia.

4:15 Developing procedures for the preparation of chicken blastoderms for transmission electron microscopy. J. D. Huber and I. L. Kosin, Electron Microscope Center and Department of Animal Sciences, Washington State University.

3:15 Enzymes of the coelacanth, Latimera chalumnae. F. P. Solomon and G. W. Brown, College of Fisheries, University of Washington.

3:30 Changing sensitivity of salmon to several environmental toxicants with size and stage of development. J. L. Hedtke and J. L. Weber, Department of Fisheries and Wildlife, Oregon State University.

3:45 Carbon tetrachloride (CCl_4) induced plasma retention of sulfobromophthlein (BSP) in the rainbow trout (Salmo gairdneri). W. H. Gingerich and L. J. Weber, Department of Fisheries and Wildlife, Oregon State University.

4:00 Biophysical alterations in salmonid epidermal mucus induced by metal exposure. U. Varanasi, National Marine Fisheries Service. (Introduced by D. Malins)

4:15 Evaluation of a model for predicting the complex interactions of environmental toxicants. C. Muska and L. J. Weber, Department of Fisheries and Wildlife, Oregon State University.

4:30 Business Meeting in Room 4320.

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